What is claimed is:

1. A method of compression of an arbitrary topology surface, comprising:

obtaining an input representation of the topology;

forming a semi-regular mesh representing a geometry of the surface where at least one vertex of the semi-regular mesh is in a different location then a vertex of the original input representation; and

forming a compressed version of the semi-regular mesh.

2. A method as in claim 1, wherein said forming a semi-regular mesh comprises sliding at least one vertex within a surface of the topology, to a location where better compression can be obtained.

3. A method as claim 1, wherein said obtaining a semi-regular mesh comprises changing a location of samples.

4. A method as in claim 1, wherein said compression comprises changing connectivity between vertices.

5. A method as in claim 1, wherein said forming comprises carrying out a wavelet transform to replace the original mesh with a coarse semi-regular mesh, and a sequence of wavelet coefficients.

6. A method as in claim 5, wherein said wavelet coefficients define a difference between a current mesh and a more detailed mesh.

7. A method as in claim 1, wherein said forming a semiregular mesh and said forming a compressed version further comprises forming a coarsest mesh, and carrying out a transform which removes correlation between vertices of remaining portions of the mesh.

8. A method as in claim 7, wherein said transform includes a Loop based wavelet transform.

9. A method as in claim 7, wherein said transform is one used for high order decorrelation and subdivision based reconstruction.

10. A method, comprising:

obtaining information on a three dimensional part, including parameter information that is described by displacements in the tangent plane to the surface and geometry information, that is normal to the surface; and

compressing said information by allocating bits preferentially to the local normal direction.

11. A method as in claim 10 wherein said compressing comprises first forming a mesh of parameter information that is more regular than an original.

12. A method as in claim 11, wherein said compressing comprises uneven scaling of tangential and normal components of said residuals.

13. A method as in claim 11, wherein said more regular meshes have substantially only normal prediction residuals.

14. A method as in claim 11 wherein said compressing comprises Subsequent hierarchical transformation of such meshes through a hierarchical transform.

15. A method as in claim 14, wherein said transform is based on subdivision methods.

16. A method as in claim 14, wherein said transform includes a wavelet transform.

17. A method as in claim 15, wherein said transform is a wavelet coefficients with a zero tree style coder.